



United States Department of Agriculture

# South Pit Expansion Pumice Mine Environmental Assessment



Forest Service

Santa Fe National Forests

Jemez Ranger District

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## Introduction

**We are proposing to authorize, through a Mineral Material Sale Contract, an operating plan that would allow a 45-acre expansion to the reclaimed South Pit Pumice Mine on National Forest System lands of the Jemez Ranger District of the Santa Fe National Forest.**

We prepared this environmental assessment to determine whether effects of the proposed activities may be significant enough to prepare an environmental impact statement. By preparing this environmental assessment, we are fulfilling agency policy and direction to comply with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. For more details of the proposed action, see the “Proposed Action and Alternatives” section of this document.

We have determined the most likely use of the pumice will be as an aggregate product; however, if the purchaser decides to use the pumice for some other purpose, the purchaser will be required to comply with applicable state regulations.

This proposed project is within the Southwest Jemez Mountains Landscape Restoration Project area, and was included in the cumulative impacts analysis for that project (USFS, 2015). This Environmental Analysis is tiered to the Environmental Impact Statement prepared for the Southwest Jemez Mountains Landscape Restoration Project.

## Location of the Proposed Project

The project area is located in T. 18 N., R. 3 E., section 25. The project area is southeast of San Juan Canyon between Cerro del Pino and Cerro Pelado (as shown on Figure 1).

## Need for the Proposal

The purpose of the proposed action is to make mineable minerals available for sale to the public, consistent with the Federal Land and Policy Management Act of 1976, 36 CFR 228 Subpart C, and the Santa Fe National Forest Land and Resource Management Plan (United States Department of Agriculture [USDA] Forest Service 1987), as amended.

The need for the action is to respond to a request from the public for a source of pumice.

## What will be decided?

The need for the proposal outlined earlier sets the scope of the project and analysis to be completed. Based on the analysis, the Jemez District Ranger will determine:

- Whether the proposed project complies with Forest Service policy to “make mineral materials on National Forest lands available to the public and to local, State, and Federal

government agencies where reasonable protection of, or mitigation of effects on, other resources is assured” per the criteria in 36 CFR 228.43.

- Whether the proposed project and alternatives could result in a significant impact. If there is a finding of no significant impact, the District Ranger will select an alternative. The decision will be based on:
  - how well the selected alternative achieves the need,
  - how well the selected alternative protects the environment and addresses issues and concerns, and
  - how well the selected alternative complies with relevant policies, laws and regulations.
- If either the proposed action or Alternative 1 is selected, then an amendment to the Forest Plan (1987, as amended) will be required.

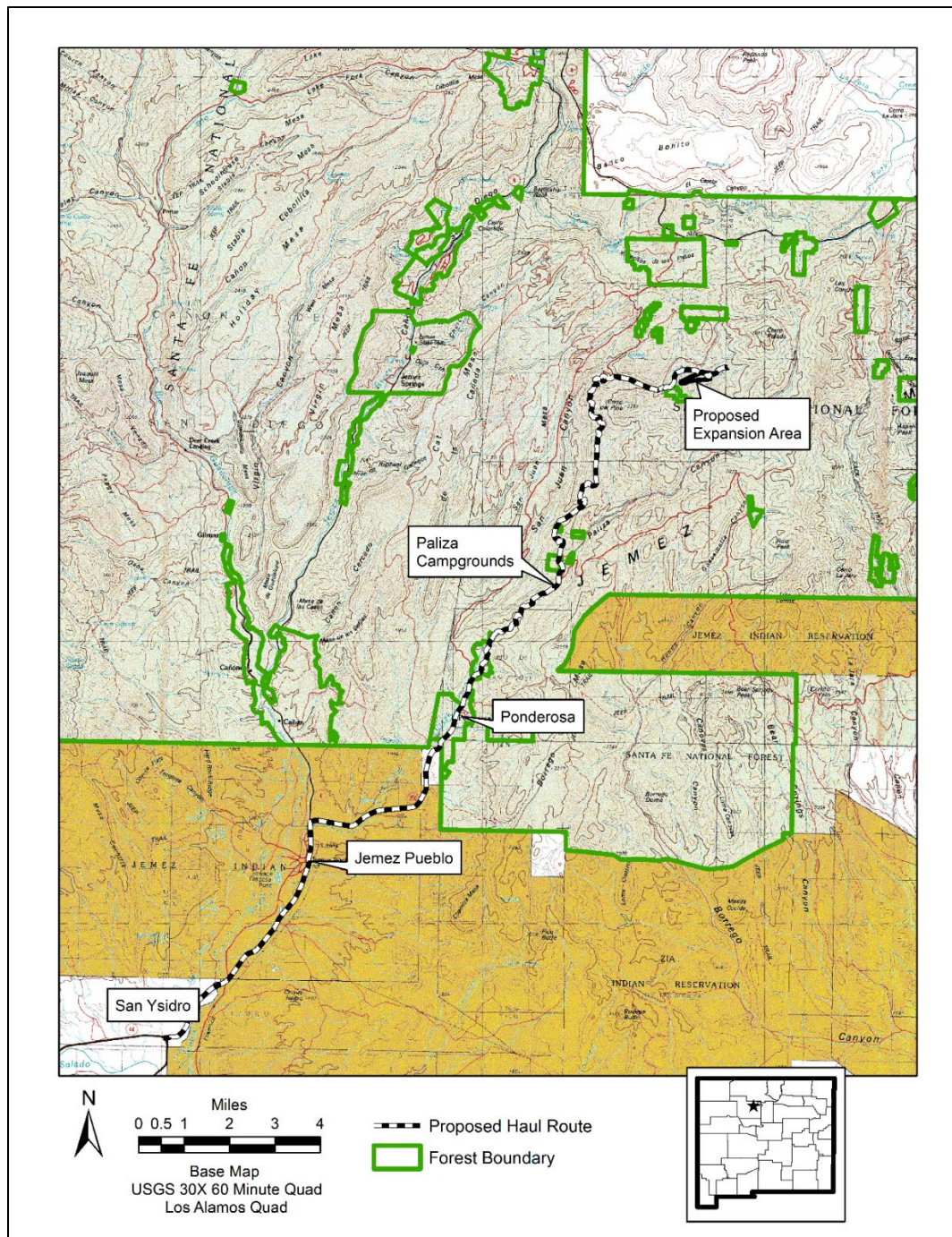


Figure 1. Vicinity map

## Proposed Action and Alternatives

### Proposed Action

The action proposed by the Forest Service to meet the purpose and need is to authorize a contract for the sale of pumice by competitive sale. The pumice would be mined from the South Pit Pumice Mine Expansion site (see Figure 2). The contract would authorize mining up to 45 acres within the project area and hauling the pumice from the site at a rate not to exceed six truckloads per day (requiring six round trips). The contract would allow for a 5-year contract beginning after all permitting and approvals are complete. If the operator met all the requirements of the initial contract, it would be extended for another 5-years. Any portion of the 45-acre area not mined by the end of the 10-year period authorized in the plan of operations would need to undergo further analysis under NEPA prior to additional mining.

According to the Forest Service regulations, the contract must be offered in a competitive sale (auction). Therefore, we are not analyzing a specific operating plan from a company. The following description of the operations is based on previous pumice mining within the Jemez Ranger District. The operator who wins the competitive sale will be required to submit an operating plan to the Santa Fe National Forest, and it will be reviewed to assure the proposed operation incorporates the measures included in this Environmental Assessment (EA) and the subsequent Record of Decision.

This proposed action would not be in compliance with the Northern Goshawk habitat requirements in Amendment #6 of the Forest Plan, so a Forest Plan amendment would be necessary. The existing guidelines (Forest Plan Appendix D [Amendment #6 October 1996] page 9) allows “[o]pening size is up to 4 acres with a maximum width of up to 200 feet. One group of reserve trees, 3-5 trees per group, will be left if the opening is greater than an acre in size. Leave at least 2 snags per acre, 3 downed logs per acre, and 5-7 tons of woody debris per acre. The amendment would be: This is a project specific amendment to the Santa Fe National Forest Plan (1987, as amended) to allow the clearing of vegetation on up to 45 acres within the proposed action area in ponderosa pine woodlands outside of Northern Goshawk post-fledging family areas with no requirements for leaving snags. The reclamation plan does call for placing downed logs and woody debris across the site.

### Mine Site Access

The operator would be required to obtain a road use permit (36 CFR 251.50) before hauling on any Forest System Road. The information included in this EA will be used as the environmental clearance record required to issue a Road Use Permit. The Road Use Permit would be valid for a 10-year period, and would allow the use of commercial vehicles for hauling of equipment and pumice. The operator would implement all road use mitigation measures discussed in this EA, including the use of binding agents on roads (magnesium chloride, Soil-tac, or similar) if Forest Service engineers determine such products would provide environmental benefits.

Access to the proposed mine location would be from San Ysidro, New Mexico, a total of about 25 miles. From State Highway 550 proceed north on State Highway 4 for 6.2 miles, then northeast on State Road (SR) 290, which intersects State Highway 4 just north of Jemez Pueblo, for 6.9 miles through the Village of Ponderosa, then 8.7 miles on forest road (FR) 10, then 1.2 miles on FR 270, then 1.4 miles on FR 270C and 270CB. Vehicles that would travel the access road might include pickups and passenger vehicles; 25-ton, 18-wheeled haul trucks; an equipment

service truck; a fuel truck; and a lowboy truck (to haul mining equipment).

To reduce noise along the haul route, the hauling permit would include a restriction that no engine (Jake) brake use would be allowed on any forest road.

Trucks hauling pumice would be required to be covered to prevent material from blowing or falling from the loads.

#### Allowable Operating Hours and Forest Road Use

The mine would operate during daylight hours (generally between the hours of 7:00 A.M. and 6:00 P.M.), only on weekdays (five days a week), excluding Memorial Day, Independence Day, Labor Day, and the Pueblo of Jemez Feast Days.

Pumice-hauling would be restricted to between the hours of 9:00 A.M. and 5:00 P.M. on Forest System roads. In addition, mine traffic would not be allowed between 2:30 PM and 4:30 P.M. on Forest System roads when the Jemez Valley School is in session. This should prevent haul trucks driving through Ponderosa during the school bus pick-up times between 7:30 and 8:30 AM, and drop-off times between 3:00 and 4:00 PM.

Road use would also be prohibited during seasonal restrictions such as road closures due to winter conditions (usually Jan 1–May 15) or fire closures (decided based on road or forest conditions and made by the District Ranger and the Forest Supervisor).

Pumice trucks hauling materials on FR 10 would be limited to 25 miles per hour (mph) or as otherwise posted, such as near Paliza Campground, to facilitate safety and to minimize dust.

Fugitive dust emissions generated from the mine surface and roads would be minimized using an environmentally sensitive dust palliative if conditions warrant.

To reduce disturbance in a peregrine falcon suitable habitat area during the early breeding season (March 1 through May 15), trucks hauling pumice would not haul before 10 A.M. and would not use Jake brakes from the junction of FR 10 and FR 266 to the beginning of blacktop pavement north of the Village of Ponderosa. In addition, strict adherence to the 10 mph speed limit near the Paliza Group and Paliza Family Campground would be emphasized.

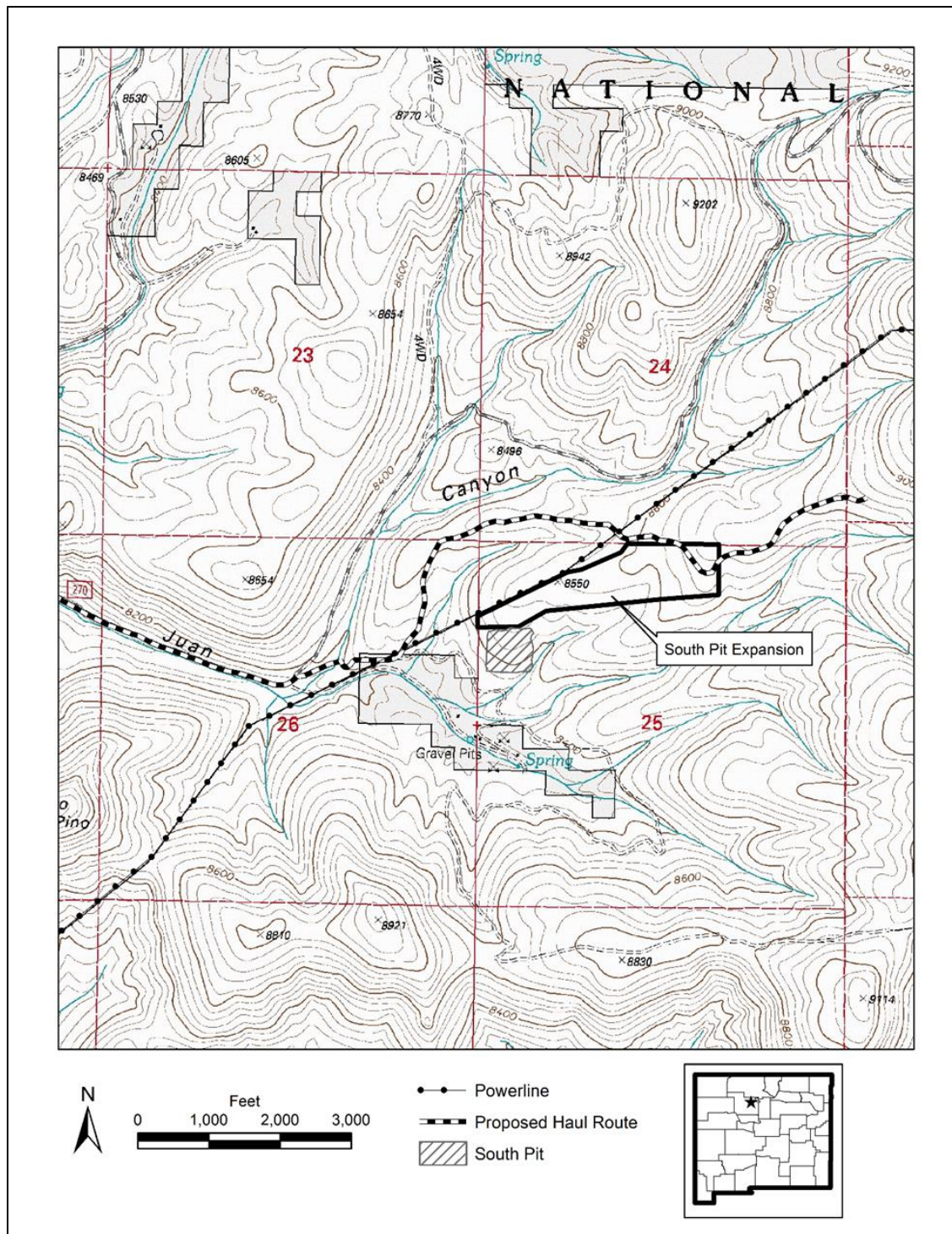


Figure 2. Project Location

### Site Preparation

Northern goshawk surveys would be completed by qualified goshawk surveyors using the methods detailed in the Southwestern Region Northern Goshawk Inventory Protocol (USDA Forest Service 1995) before any work at the proposed expansion area commences and prior to clearing subsequent mining areas. In the event that female goshawks are encountered during the survey, a nest search of the area would be implemented. If male goshawks are encountered, the search perimeter would be widened. In the event that goshawk individuals are located within 0.5 mile of the project area, consultation with the District Biologist would commence to identify the appropriate avoidance/mitigation measures that should be implemented to ensure the individual is left undisturbed. If a goshawk nest is located during future pumice activities (i.e., following the pre-disturbance survey), work at the site would immediately stop and the District Biologist would be consulted to help ensure no disturbance to the nest occurs until young are fledged and to identify a safe period to commence with cutting in the nest area. Additional surveys might be required prior to any new clearing scheduled between March 1 and August 15. The surveys would not be required in areas previously cleared.

To avoid direct impacts to migratory birds protected by the Migratory Bird Treaty Act (16 U.S.C. 703, et seq.), clearing of vegetation would be scheduled between August 15 and March 1, outside of the normal breeding season for most avian species. Should vegetation removal be required during the breeding season, pre-construction breeding bird surveys would be conducted by qualified personnel to ensure that no breeding birds would be affected. Any positive pre-construction survey results or observation of affected species during construction would be discussed with the District Biologist to coordinate nesting area avoidance.

The operator would be required to obtain any required storm-water permits through the New Mexico Environment Department Surface Water Quality Bureau, and to meet any requirements within that permit. A copy of the permit or letter from the Environment Department stating no permit is required would be filed with the Forest.

Soil would be stockpiled prior to mining and replaced during reclamation so that the best soil is applied as topsoil.

Equipment would be cleaned prior to entering the Forest to prevent the introduction of weeds to the mine site.

### Mine Operations

Mining is to be by open-pit method, with the pit not exceeding 30 feet deep.

The mine pit areas would be designed to prevent off-site runoff (internally drain).

The designated 45-acre South Pit Pumice Mine expansion area would be surrounded by a perimeter fence and direct vegetation disturbances would not occur outside of the fenced boundary.

Pumice deposits would be mined using bulldozers and/or front-end loaders. A portable screening plant and a loading conveyor would be authorized at the site.

The 45 acre mine site would be divided into smaller tracts not to exceed 8 acres. The actively

mined block would be cleared as needed.

The trees would be cut and topsoil would be removed from the active mine area.

Salvaged topsoil would be stockpiled on site at a location and in a manner to limit the potential for erosion. Soils would be stripped and stored uncompacted up to 8 feet high. These piles would be seeded with annual ryegrass, winter wheat, and/or streambank wheatgrass to prevent mobilization of windblown soil particles.

All timber and slash materials removed during site preparation would be retained to aid in final reclamation.

While mining is ongoing, berms or well-maintained silt fencing would prevent runoff from the site. Waterbars and/or other preventative measures would be installed on the temporary access road to prevent runoff from the road.

If a bald eagle (*Haliaeetus leucocephalus*), Mexican spotted owl (*Strix occidentalis lucida*), northern goshawk (*Accipiter gentiles*), or American peregrine falcon (*Falco peregrinus anatum*) is observed within 0.25 mile of the proposed South Pit Pumice Mine expansion area, the operator would suspend all mining activity and Jemez Ranger District personnel would be notified immediately.

Pumice stockpiles on site would not exceed 240 cubic yards; however, topsoil would be stockpiled for use during reclamation.

No permanent structures would be constructed as part of the mine, although at least one self-contained portable toilet is required to be on the site during all operations. Earthen structures such as berms and catchments for water and erosion control are allowed.

The operator would be responsible for the control of noxious weeds and other undesirable plants throughout the mining and reclamation of the site. Weed control would be done in compliance with Forest policy and direction.

Storage of fuel or oil would not be permitted at the project site.

Equipment would be fueled and lubricated in a spill-containment facility constructed by the operator. Used oil and other waste products must be collected and disposed of in an authorized facility off of Santa Fe National Forest lands.

A spill kit for each piece of heavy machinery would be required to be kept on site. Spills must be reported immediately to Santa Fe National Forest authorized officer, who may shut down the mine until the spill is remediated. Spills would be contained, and contaminated material would be disposed of in an authorized facility off of Santa Fe National Forest lands.

The haul trucks (used to haul the mined material from the mine to the operator's processing site) would not be larger than 25-ton (not to exceed 40 cubic yard), 18-wheeled semi-trucks. The operator may utilize smaller haul trucks if desired.

### Reclamation

The reclamation for this proposed project is designed to meet the goals of the Southwest Jemez Mountains Landscape Restoration Project, along with the requirements of the Forest Plan and the 36 Code of Federal Regulations 228 Subpart C regulations.

Reclamation would begin as soon as two 8-acre areas are open, ensuring that no more than 16 acres are open at any one time.

As an area is mined out, the working face will be sloped to no more than a 3:1 (horizontal: vertical) slope.

At the conclusion of mining, the site would be reshaped to approximate the surrounding topography. The stockpiled soil would be spread over the entire disturbed area. The access road would be reshaped, ripped (tilled or otherwise disturbed to prepare for plant germination), and revegetated to blend with the surrounding topography.

The boundary fence would be left in place and in good repair following the reshaping of the site. The operator would be responsible for the maintenance of the fence until the revegetation is accepted by the Forest Service.

The contract would require that the project site be seeded with native vegetation and mulched with weed-free straw.

Because revegetation may take 3 to 6 years to become successful, the Forest Service would hold the operator's bond after the contract is ended until satisfied with the reclamation.

The operator would be required to submit detailed design specifications for erosion control (i.e., an erosion control plan). The Forest Service would conduct monitoring of erosion-control practices.

Erosion-control barriers made of straw bales, straw wattles, and/or silt fencing would be constructed as needed during mining or reclamation to prevent erosion from occurring.

### Seeding

#### **Seed Mix**

A weed-free seed mix consisting of at least five grass species and three forbs/shrubs from the Reclamation Seed List (Table 1) will be applied by broadcast seeding in the fall.

**Table 1 Reclamation Seed List**

<b>Common Name</b>	<b>Species</b>	<b>lbs/acre PLS</b>
<b>Grasses</b>		
Mountain muhly	Muhlenbergia montana	2
Junegrass	Koeleria macrantha	0.5
Arizona fescue	Festuca arizonica	1
Pine dropseed	Blepharoneuron tricholepis	5
Squirreltail	Elymus elymoides	4
Indian ricegrass	Oryzopsis hymenoides	3

Sand dropseed	<i>Sporobolus cryptandrus</i>	2
Mountain brome	<i>Bromus carinatus</i>	1
Sideoats grama	<i>Bouteloua curtipendula</i>	2
Western wheatgrass	<i>Agropyron smithii</i>	4
Intermediate wheatgrass	<i>Thinopyrum intermedium</i>	1
<b>Forbs and Shrubs</b>		
American vetch	<i>Vicia americana</i>	1
Utah sweetvetch	<i>Hedysarum boreale</i>	2
Golden banner	<i>Thermopsis montana</i>	3
Currant	<i>Ribes cereum</i>	4
Woods rose	<i>Rosa woodsii</i>	4
Mountain mahogany	<i>Cercocarpus montanus</i>	1.5

### Application of Seed

- Seeds may be applied by broadcast seeding
- Ensure seed mixes are certified weed-free. Seed mix and its application should comply with the requirements of all federal statutes and regulations governing seeds, plants, and weeds. These requirements include but are not limited to: the Noxious Weed Control Act, the Federal Seed Act and Amendments, and all other rules and regulations pertaining to these laws.
- Provide certification substantiating that material complies with specified requirements by submitting seed bag tags and copies of seed invoices identified by project name.
- Obtain native grass seed from sources in New Mexico or surrounding states
- Do not seed during windy weather, or when topsoil is dry, saturated, or frozen.
- Immediately following seeding operation, lightly rake seedbed or loosen with a chain harrow to provide approximately ¼ inch of soil cover over most of the seed.
- Prohibit vehicles and other equipment from traveling over the seeded areas. Signs will be posted in the reclaimed roadways to discourage travel into the reclaimed area.

### Mulching and Erosion Control

- Straw mulch is appropriate for slopes at or flatter than 2:1. Straw shall be from oats, wheat, rye, barley, or rice that are free from noxious weeds, mold, or other objectionable material.
- Apply straw mulch at a minimum rate of 1.5 tons per acre of air-dry material.
- Spread mulch uniformly over the area either by hand or by mechanical means to achieve 80 percent ground cover.
- Depth of applied straw mulch shall not exceed three inches.

- Do not mulch when wind velocity exceeds 10 mph.
- If straw mulched areas will not stay correctly anchored, crimping or hydraulic mulch wood fibers with tackifier may be used.
- Prohibit foot/vehicle traffic from hydraulically mulched areas.

### Monitoring and Maintenance

The Forest Service would monitor the site until acceptable re-vegetation has occurred to minimize erosion and ensure noxious weeds do not become established in the disturbed area. Acceptable re-vegetation would consist of a minimum of 50% ground cover (live vegetation or vegetation litter) after at least three growing seasons.

The operator would be responsible for noxious weed control, maintaining posted signs, repairing excessive erosion, and re-seeding, mulching, or installing other erosion control devices if necessary until the reclamation is accepted by the Forest Service.

Erosion control blankets over native grass seeding or other measures such as bonded fiber matrix or wattles may be required if excessive erosion develops due to steep slopes which prevent revegetation.

Reseed areas greater than 10 square feet or repetitive voids greater than 4 square feet (amounting to more than 20 percent of any area) which have no vegetation growing during the growing season following installation.

After completion of work, clear site of excess debris and objects that may hinder maintenance and detract from the appearance of the site.

The boundary fence would be maintained by the operator until the revegetation is accepted by the Forest Service. Following acceptance, the operator would remove the fence within one year.

### **Alternative 1 – Reduced Haul Rate**

This alternative is the same as the Proposed Action except the haul rate is decreased to 4 truckloads (4 round trips) per day.

This alternative would not be in compliance with the Northern Goshawk habitat requirements in Amendment #6 of the Forest Plan, so a Forest Plan amendment would be necessary. The existing guidelines (Forest Plan Appendix D [Amendment #6 October 1996] page 9) allows “[o]pening size is up to 4 acres with a maximum width of up to 200 feet. One group of reserve trees, 3-5 trees per group, will be left if the opening is greater than an acre in size. Leave at least 2 snags per acre, 3 downed logs per acre, and 5-7 tons of woody debris per acre. The amendment would be: This is a project specific amendment to the Santa Fe National Forest Plan (1987, as amended) to allow the clearing of vegetation on up to 45 acres within the proposed action area in ponderosa pine woodlands outside of Northern Goshawk post-fledging family areas with no requirements for leaving snags. The reclamation plan does call for placing downed logs and woody debris across the site.

### **Alternative 2 – Reduced Haul Rate and Reduced Area**

This alternative would allow a haul rate of 4 truckloads (4 round trips) per day, and restricts the

amount of acreage open to mining to 4 acres (within the 45 acres analysis area). Once the 4 acres of mining was completed, reclamation of that acreage would be completed and the mine closed. All other requirements in the Proposed Action would apply to this alternative.

The four acre site could occur anywhere within the 45 acre expansion area (as illustrated in Figure 3), and would be determined in consultation with the operator. The islands could vary in location within the site, depending upon where snags are located. Each island would contain three to five live trees and two snags.

If the area was mined at 4 truckloads per day for the entire year, it is estimated that it would take approximately two years to mine out the 4 acre area.

This alternative would be in compliance with the Northern Goshawk habitat requirements in Amendment #6 of the Forest Plan, so no amendment would be necessary.

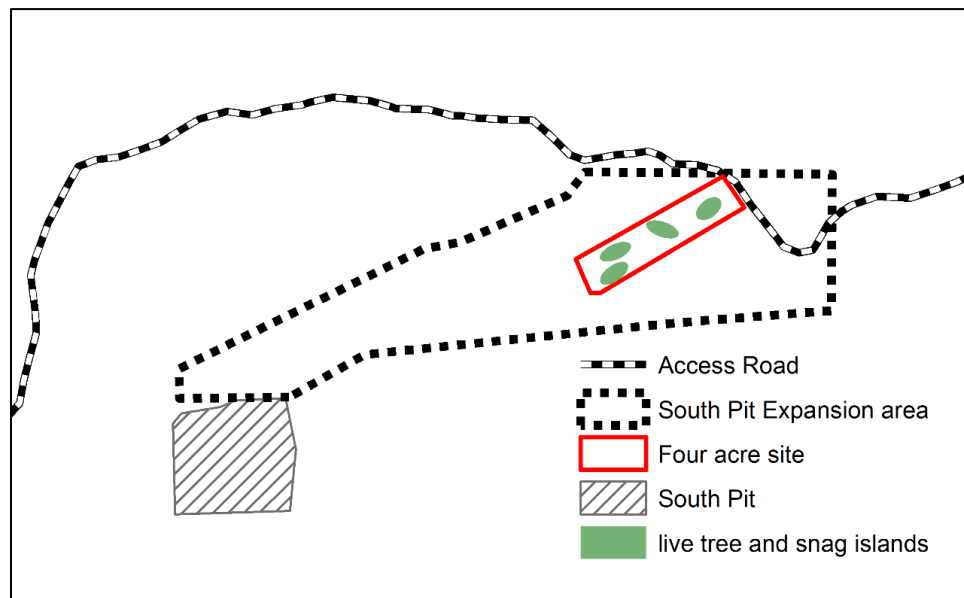


Figure 3. Schematic diagram illustrating reduced area within the project area

**Table 2. Comparison of Alternatives**

	Proposed Action	Alternative 1 – Reduced Haul Rate	Alternative 2 – Reduce Haul Rate and Reduced Area
<b>How well does each alternative respond to Forest Plan (1987, as amended) minerals management guidance</b>			
Respond to requests for large quantities of mineral materials...where not needed for administrative use.	Would meet Forest Plan guidance	Would meet Forest Plan guidance	Would meet Forest Plan guidance
Control surface uses in mineral operations through plans of operation and permits, which provide for all resource objectives.	Project design criteria and mitigations would minimize impacts associated with project implementation.	Project design criteria and mitigations would minimize impacts associated with project implementation.	Project design criteria and mitigations would minimize impacts associated with project implementation.
Ensure reclamation of mineral areas to restore resource damage and remove public safety hazards.	Ongoing reclamation would be required during mining operations. Forest Service monitoring of reclamation would occur to ensure compliance with reclamation mitigations and specifications.	Ongoing reclamation would be required during mining operations. Forest Service monitoring of reclamation would occur to ensure compliance with reclamation mitigations and specifications.	Reclamation would be required at the completion of mining operations. Forest Service monitoring of reclamation would occur to ensure compliance with reclamation mitigations and specifications.
<b>What impact does each alternative have on the resource</b>			
Traffic	80% increase over 2011 counts on FR 270/FR 10 (N of Paliza) 3% increase over 2015 counts on SR 290 0.7% increase over 2015 counts on SR 4	60% increase over 2011 counts on FR 270/FR 10 (N of Paliza) 2% increase over 2015 counts on SR 290 0.6% increase over 2015 counts on SR 4	Same as Reduced Haul Rate alternative
Wildlife			

Air Quality	Would add to cumulative air quality impacts in the area.	Same as proposed action	Same as proposed action
Water Resources	Minor impact on surface water due to fugitive dust from traffic. No impact to groundwater.	Surface water impacts somewhat less than proposed action due to less traffic. No impact to groundwater	Same as Reduced Haul Rate alternative.
Heritage Resources	No direct impacts to heritage resources are expected.	Same as proposed action	Same as proposed action
Noise	None of the alternatives would have a direct impact on noise levels outside of the mine site. The noise of the mine related traffic would be an incremental increase to the existing traffic noise,	Same as proposed action	Same as proposed action

# Environmental Impacts of the Proposed Action and Alternatives

This section summarizes the potential impacts of the proposed action and alternatives.

## Traffic

Traffic impacts on FR 10, through the Village of Ponderosa on SR 290, and through the Jemez Pueblo on SR 4 were the primary concerns raised in comments received by the Forest Service during public scoping. Numerous comments received during scoping for this proposal requested that the Forest Service limit the speed, times of travel, or noise caused by pumice hauling on State Road (SR) 290 through the Village of Ponderosa and SR 4 through the Pueblo of Jemez. The Forest Service only has authority to implement management stipulations or regulate use over roads on National Forest Lands such as FR 10, 270, and 270C. The Forest Service can regulate the time of pumice hauling on forest roads used to access the project location, thus affecting the use of SR 290 and other connecting state routes; but the Forest Service cannot directly regulate use of pumice-hauling trucks on roads that fall under the State of New Mexico's jurisdiction.

This analysis will quantify traffic levels on FR 10 according to available data, and will discuss how the previous pumice mines contributed to traffic levels on FR 270C, 270, and 10, and State roads 290 and 4.

For this analysis, traffic associated with the proposal is quantified as the number of loads of pumice hauled per day. The difference between the action alternatives is the number of loads allowed per day.

## Affected Environment

FR 10 is one of the main Forest System Roads used by visitors to the District. It is the route used for access to the Paliza Group and Family Campgrounds. FR 10 also provides access to private property inholdings, and can be used as a north-south alternate to State Highway 4 when traveling between the communities of Ponderosa and Sierra Los Pinos. FR 10 provides critical access for accessing wildland fires on the southern part of the Forest. FR 10 is also the access to many of the management activities proposed in the Southwest Jemez Mountain Restoration proposal.

FR 10 is considered a Level 2 Forest System Road, meaning it is a key access point for lesser used Forest System Roads, and as such receives more regular maintenance to facilitate proper road conditions.

FR 10 is an unpaved gravel and dirt road that stretches approximately 11 miles between Ponderosa on the south end and Sierra Los Pinos (also known as Vallecitos de los Indios) on SR 4 at the north end. At times the road winds its way over steep slopes with switchbacks and drop-offs of several hundred feet to one side or the other.

The portion of FR 10 adjacent to the Paliza Campground has a posted speed limit of 10 mph, and a speed limit of 25 mph is in effect on the remainder of the road based on its engineering specifications.

Use of FR 10 varies according to season:

- In the winter months when icy conditions or snow often prevent vehicular access, it receives the lightest use. In years with heavy snow, a closure order is in place to prevent use of the road from January 1 to May 15.

- In the spring and summer, recreational use near Paliza Group and Family Campgrounds result in substantially higher amounts of traffic on the southern 1 or 2 miles of the road and smaller increases of use throughout the length of the route. This is reflected in both the 2005-2006 and 2011 traffic counts. The traffic counter located at the south end of FR 10 receives the greatest use (almost twice as much as the other counters), most likely because it is the main entrance point to Paliza Canyon and other National Forest System lands nearby. In contrast to the other counters, the traffic counter closest to Ponderosa receives much more use on weekends than on weekdays.
- In the fall, hunters and firewood cutters increase the use of FR 10 primarily on the southern 8 miles of the road.
- During the time the 2006 counts were made, two pumice mines were in operation and the traffic associated with those mines is included in the counts. Tallies from haul tickets submitted during that time show the two mines totaled about 12 loads per haul day, although the number of loads per day was highly variable. The two mines were operated by different companies, and their mining activities were not coordinated. One of the mines used Forest Roads 270 and 10, while the other directly accessed FR 10.
- Forest management activities occur year round. Large increases may occur during the wildfire season, particularly if there are fires which need to be accessed using FR 10. This is the primary reason data was not reported from June 25 through September 13, 2011. Prescribed burning may be done in the fall, winter, or early spring depending upon the moisture conditions. Logging may occur year round, but fire restrictions and heavy rain or snow may cause short-term cessations.

A summary of the traffic data collected by the Forest and New Mexico Dept. of Transportation in 2006 (while the previous pumice mining was ongoing) and the most recent available information is shown in Table 3.

**Table 3. Traffic Counts on Access Roads**

<b>Road segments</b>	<b>2006 (dates)</b>	<b>Most Recent Counts (dates)</b>
State Road 4	3182 (average annual daily traffic from NM DOT)	2843 (average annual daily traffic 2015 from NM DOT)
State Road 290	881 (average annual daily traffic from NM DOT)	744 (average annual daily traffic 2015 from NM DOT)
FR 10 (south of Paliza Campgrounds)	59 (weekday counts Jan-March 2006)	132 (weekday counts May-June 2011)
FR 10 (North of Paliza Campgrounds and south of junction with FR 270)	33 (weekday counts Jan – March 2006)	23 (weekday counts Oct – Nov 2011)
FR 270	27 (weekday counts Jan – March 2006)	27 (weekday counts Jan – March 2006)

## Proposed Action

The proposed action would allow up to six truckloads to be removed each day, along with other necessary mine related traffic. This traffic might include workers going to and from the mine site and equipment fuel and repair vehicle traffic, and occasional visits by State or Forest Service administrators. The total traffic would be less than 10 vehicles per day (20 round trips). This would nearly double the traffic from the 2011 counts on FR 270 and the portion of FR 10 north of the Paliza campgrounds. It would represent a 3% increase from the 2015 average daily traffic on SR 290 through Ponderosa, and 0.7% increase from the 2015 average daily traffic on SR 4 through Jemez Pueblo.

## Reduced Haul Rate Alternative

This alternative would allow up to four truckloads each day, along with the other necessary mine related traffic. The total traffic would be less than 8 vehicles per day (16 round trips). This would be a 60% increase from the 2011 counts on FR 270 and the portion of FR 10 north of the Paliza campgrounds. It would be a 2% increase from the 2015 average daily traffic on SR 290 through Ponderosa, and 0.6% increase from the 2015 average daily traffic on SR 4 through Jemez Pueblo.

## Reduced Haul Rate and Reduce Area Alternative

This alternative would have the same traffic increases as shown in the Reduce Haul Rate Alternative, but over a shorter period of time. Instead of expecting the traffic to continue over a ten year period, it would take about 2 years to mine the four-acre area.

## Wildlife

### Proposed, Threatened, Endangered, and Forest Sensitive Species

The following section focuses on briefly disclosing environmental consequences to fish, terrestrial wildlife, and plant species and their habitats in regard to project alternatives. Species considered for this project include all Regional Forester's (Region 3) Sensitive Species as required by Forest Service Manual (FSM) 2670.4 and the biological evaluation (BE) process. A Biological Assessment (BA) is being prepared to meet Section 7 Consultation requirements of the Endangered Species Act (1973 as amended). The BE and BA are available by request and can be found in the project record.

Table 4 contains effect determinations for all Regional Forester's Forest Sensitive Species (USFS 2017) and proposed, threatened and endangered species listed under the Endangered Species Act. Species in Table 4 which have an "N/A" indicating not applicable across all alternatives are not analyzed in this document or for this project in supporting documentation, because there is no habitat within the project area for the species and they are not known to occur or suspected within the project area.

Table 4 discloses generalized effects from the project by alternative for proposed, threatened, endangered and Forest Sensitive species which were identified for further analysis. For full species accounts, habitat description, existing condition, direct, indirect and cumulative effects to species and their habitat see the BE. Management Indicator Species and Migratory Bird Treaty Act analyses are discussed further below within this section but is expanded on, when appropriate, in the BE.

For a full description of the alternatives discussed here see the "Proposed Action and Alternatives" section. It is important for the reader to review the proposed action carefully. For this section, understanding that not all 45 acres would be cleared and mined at once should be noted and considered. As blocks are cleared and mined, completed 8 acre blocks would have reclamation work occur, then the next block would be opened for mining.

**Table 4.** Regional Foresters Sensitive Species, Proposed, Threatened, Endangered Species and Effect Determination by Alternatives

Common Name	Scientific Name	Status	Proposed Action	Alternative 1 (Reduced Haul)	Alternative 2 (Reduced Haul and Area)
<b>Amphibians</b>					
Jemez mountains salamander	<i>Plethodon neomexicanus</i>	E	MANLAA	MANLAA	MANLAA
Northern leopard frog	<i>Lithobates pipiens</i>	RFSS	N/A	N/A	N/A
<b>Birds</b>					
American peregrine falcon	<i>Falco peregrinus anatum</i>	RFSS	MIIH	MIIH	MIIH
Bald eagle	<i>Haliaeetus leucocephalus</i>	RFSS	N/A	N/A	N/A
Boreal owl	<i>Aegolius funereus</i>	RFSS	N/A	N/A	N/A
Burrowing owl (western)	<i>Athene cunicularia hypugaea</i>	RFSS	N/A	N/A	N/A
Gray Vireo	<i>Vireo vicinior</i>	RFSS	N/A	N/A	N/A
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	MANLAA	MANLAA	MANLAA
Northern goshawk	<i>Accipiter gentilis</i>	RFSS	MIIH	MIIH	MIIH
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	RFSS	N/A	N/A	N/A
White- Tailed Ptarmigan	<i>Lagopus leucura</i>	RFSS	N/A	N/A	N/A
<b>Invertebrates</b>					
Lilljeborg Peaclam	<i>Pisidium lilljeborgi</i>	RFSS	N/A	N/A	N/A
Ruidoso Snaggletooth	<i>Gastrocopta ruidosensis</i>	RFSS	N/A	N/A	N/A
<b>Mammals</b>					
American marten	<i>Martes americana origenes</i>	RFSS	N/A	N/A	N/A
American pika	<i>Ochotona princeps saxatilis</i>	RFSS	N/A	N/A	N/A
Canada lynx	<i>Lynx canadensis</i>	RFSS	N/A	N/A	N/A
Cinereus (masked) shrew	<i>Sorex cinereus</i>	RFSS	N/A	N/A	N/A
Goat peak pika	<i>Ochotona princeps nigrescens</i>	RFSS	N/A	N/A	N/A
Gunnison's prairie dog (prairie) includes montane	<i>Cynomys gunnisoni</i> <i>Cynomys gunnisoni pop</i>	RFSS	N/A	N/A	N/A
New Mexico meadow jumping mouse	<i>Zapus hudsonius luteus</i>	E	NE	NE	NE

Common Name	Scientific Name	Status	Proposed Action	Alternative 1 (Reduced Haul)	Alternative 2 (Reduced Haul and Area)
Pale Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i>	RFSS	N/A	N/A	N/A
Preble's shrew	<i>Sorex preblei</i>	RFSS	N/A	N/A	N/A
Spotted bat	<i>Euderma maculatum</i>	RFSS	N/A	N/A	N/A
Western water shrew	<i>Sorex navigator</i>	RFSS	N/A	N/A	N/A
<b>Fish</b>					
Rio Grande chub	<i>Gila pandora</i>	RFSS	N/A	N/A	N/A
Rio Grande cutthroat trout	<i>Oncorhynchus clarki virginalis</i>	RFSS	N/A	N/A	N/A
Rio Grande sucker	<i>Catostomus plebeius</i>	RFSS	N/A	N/A	N/A
<b>Plants</b>					
Arizona Willow	<i>Salix arizonica</i>	RFSS	N/A	N/A	N/A
Chaco milkvetch	<i>Astragalus micromerius</i>	RFSS	N/A	N/A	N/A
Chama blazing star	<i>Mentzelia conspicua</i>	RFSS	N/A	N/A	N/A
Greene milkweed	<i>Asclepias uncialis ssp. uncialis</i>	RFSS	N/A	N/A	N/A
Heil's alpine whitlowgrass	<i>Draba heilii</i>	RFSS	N/A	N/A	N/A
Holy Ghost Ipomopsis	<i>Ipomopsis sancti-spiritus</i>	<b>E</b>	N/A	N/A	N/A
Pecos fleabane	<i>Erigeron subglaber</i>	RFSS	N/A	N/A	N/A
Pecos mariposa lily	<i>Calochortus gunnisonii var. perpulcher</i>	RFSS	N/A	N/A	N/A
Robust larkspur	<i>Delphinium robustum</i>	RFSS	N/A	N/A	N/A
Springer's blazing star	<i>Mentzelia springeri</i>	RFSS	N/A	N/A	N/A
Tufted sand verben	<i>Abronia bigelovii</i>	RFSS	N/A	N/A	N/A
Yellow lady's-slipper	<i>Cypripedium parviflorum pubescens calceolus var.</i>	RFSS	N/A	N/A	N/A
Wood lily	<i>Lilium philadelphicum</i>	RFSS	N/A	N/A	N/A
<b>E –</b> Listed as endangered under the endangered species act (1973 as amended) <b>T -</b> Listed as threatened under the endangered species act (1973 as amended) <b>RFSS –</b> Forest Sensitive Species, as identified by the Regional Forester for Region 3. <b>N/A-</b> Not Applicable to this project. This is due to lack of suitable habitat for the species in the project area and lack of occurrence records. No direct, indirect or cumulative impacts or effects are possible to the species because it does not occur within the project area. <b>MIH-</b> May Impact Individual Forest Sensitive Species and action does not contribute towards loss of population viability or trend species towards federal listing <b>NE-</b> No effect <b>MANLAA-</b> May affect, not likely to adversely affect					

Table 5 discloses and compares anticipated impacts to relevant proposed, threatened, endangered and Forest Sensitive Species from each alternative. In general, effects across the proposed action and alternatives are similar and noted within the appropriate column when and if they differ. The term “project footprint” is defined in this section as the area which is proposed for vegetation clearing and pumice mining and is 45 acres. The term “project area” refers to a larger area which includes the haul route and adjacent drainages which would experience noise generation above ambient noise levels.

**Table 5. Proposed, Threatened, Endangered and Forest Sensitive Species evaluated, general effects analysis and effect determination by alternative**

Common Name	General Effects Comparison		
	Proposed Action	Alternative 1 (Reduced Haul)	Alternative 2 (Reduced Haul and Area)
<b>Amphibians</b>			
Jemez mountains salamander	This species is not known or suspected to occur within the project area, because the soils are dominated by pumice soils which are associated with unsuitable salamander habitat. There is low canopy cover and vegetation is primarily south-facing aspect ponderosa pine. The immediate project foot print also (45 acres) lacks cover objects such as rocks and logs. The probability of occupancy model indicates a zero to 20% chance that salamanders will occupy this area during monsoon rains. The Predicted Occupancy Model (Bird and Bagget 2012) is based on soils, aspect, slope, and positive/ negative survey results among many other variables. Five categories are used within the model to predict occupancy by salamander and it is used as within pre-field reviews when planning projects. Zero to 0.2 occupancy, (0.2 -0.4), (0.4-0.6), (0.6-0.8), and (0.8-1) which is the highest predicted occupancy value. As such, the entire project footprint falls within the 0-0.2 probability of occupancy for the species. The project area lacks the physical and biological features necessary for this species to occur. Therefore, a <b>May Effect, Not Likely to Adversely Affect</b> determination has been made for the species. No critical habitat is designated within the project area therefore, a <b>No Effect</b> determination has been made for critical habitat because no effects to critical habitat are possible.	Same as previous column.	Same as previous column with the exception that the area mined for pumice would be reduced from 45 to 4 total acres.
<b>Birds</b>			
Mexican spotted owl (MSO)	The project footprint lacks nesting and roosting habitat for the Mexican spotted owl. The immediate project area and vicinity (1 mile buffer around 45 acre footprint) are dominated by ponderosa pine and lack rocky canyons, contiguous stands of mixed conifer forest (with large trees) and rock outcrops with potholes that could be used for nesting. No direct effects to the species are possible. Indirect effects are possible. Foraging habitat within the project area would be reduced in quality due to the	Same as previous column.	Same as previous column with the exception that the area mined for pumice would be reduced from 45 to 4 total acres. The impact to foraging habitat for the Mexican spotted owl would be greatly reduced due to the

Common Name	General Effects Comparison		
	Proposed Action	Alternative 1 (Reduced Haul)	Alternative 2 (Reduced Haul and Area)
	proposed action as trees are removed and the area is mined for pumice. Foraging behavior could be altered as a result of the project as owls may avoid this area because of the lack of prey base and their habitat. No indirect related hauling impacts are anticipated, because the Mexican spotted owl roosts during the day when hauling would occur. Nesting and roosting occurs in deep –rocky canyons which are not located close enough to FR10 for impacts to occur. The topography of known owl sites would prevent noise disturbance from hauling. Therefore, a <b>May Effect, Not Likely to Adversely Affect</b> determination has been made for the species. No critical habitat is designated within the project area therefore, a <b>No Effect</b> determination has been made for critical habitat because no effects to critical habitat are possible.		reduced footprint proposed within this alternative.
American Peregrine Falcon	No direct or indirect effects to nesting habitat are possible, because the project area lacks cliff ledges, and rock outcrops suitable for nesting and roosting activity for peregrine falcons. Foraging habitat will be diminished in the affected area through pumice mining activities. However, there are no known breeding areas for peregrine falcon within 2 miles of the proposed project in any direction. Foraging habitat impacts would occur to marginal foraging habitat which is located far from known breeding areas. Hauling could potentially impact foraging falcons through excessive noise generation from hauling trucks but impacts would only occur along FR 10 near Paliza campground and only if a falcon happened to be foraging adjacent to the road. Foraging habitat along FR 10 is marginal because of the high recreational use and lack of undisturbed habitat within the corridor. Therefore, the implementation of this project <b>May Impact Individual peregrine falcon</b> . The action does not contribute towards loss of population viability or trend species towards federal listing because no nesting habitat disruption is possible.	Same as previous column except this alternative would have less haul related disturbance to foraging falcons. This would be 4 truckloads a day as opposed to the 6 within the proposed action.	Same as previous column with the exception that the area mined for pumice would be greatly reduced from 45 to 4 total acres. This alternative would have a lesser impact on foraging habitat and the species, due to less surface area being impacted and less noise disturbance related impacts along the haul route.
Northern goshawk	No direct or indirect effects to nesting habitat are possible through all alternatives. The project area lacks nesting components and structure, exhibits low canopy cover (<40%) and does not contain contiguous stands of mature forest that could support nesting northern goshawks. This was	Same as previous column except this alternative would have less haul related disturbance to foraging	Same as previous column with the exception that the area mined for pumice would be greatly reduced from 45 to 4 total acres. This alternative

General Effects Comparison			
Common Name	Proposed Action	Alternative 1 (Reduced Haul)	Alternative 2 (Reduced Haul and Area)
	<p>determined through field reconnaissance of the project footprint and on site habitat evaluation. Roosting is a possibility only within adjacent drainages to the north and south which are not within the 45 acre footprint. The project footprint contains low quality habitat as mentioned above. There are two post-fledgling family areas (PFAs) located on either side of the proposed mine. There is a PFA 0.3 miles to the west and another PFA 0.5 mile to the northeast. Foraging habitat for this species would be directly impacted by the proposed action because goshawk foraging areas are very large and encompass the project area. Vegetation clearing and mining activities would result in up to 45 acres of foraging habitat loss. This is because as vegetation and mining activities commence, noise disturbance and lack of prey base habitat would force goshawks to forage elsewhere. The loss of foraging habitat would continue until mining activities have concluded and reclamation occurs. Reclamation of the site would include recontouring of the modified area to mimic the pre-disturbance topography, replacing salvaged topsoil and revegetation with herbaceous seed mix. Foraging habitat would not be expected to support prey base for this species for at least 5- 10 years post reclamation. It is possible that individual unknown goshawks could be disturbed during project implementation through noise generated from mining and hauling activities. The site and adjacent PFAs will be surveyed in 2020 and adjustments to implementation may be recommended at that time. Therefore, the implementation of this project <i>May Impact Individual northern goshawk and their habitat</i>. The action does not contribute towards loss of population viability or trend the species towards federal listing because no nesting habitat removal would occur and impacts to foraging habitat are temporary in nature and only impact a 45 acre area.</p>	<p>goshawks. This would be 4 truckloads a day as opposed to the 6 within the proposed action.</p>	<p>would have a lesser impact on foraging habitat and the species, due to less surface area being impacted and less noise disturbance related impacts along the haul route.</p>



## Cumulative Effects

### Proposed, Threatened, Endangered and Forest Sensitive Species

Cumulative effects analyzed at the project area scale. This includes the footprint and haul route south to Paliza campground area near the town of Ponderosa on National Forest System lands. Cumulative effects include past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes actions. Timber harvest, road construction, maintenance, powerline installation and maintenance, adjacent private land use, recreation, grazing, fire management and future timber harvest (adjacent and within project area) are considered cumulative effects to Jemez mountain salamander, Mexican spotted owl, peregrine falcon and northern goshawk.

The proposed action and alternatives would slightly add to these past and future activities across 45 acres and the haul route. No cumulative effects are anticipated for Jemez mountain salamander because they are not expected to occur at the site and habitat is not suitable because it lacks the biological and physical features necessary for the species.

Cumulative effects are expected for the Mexican spotted owl, northern goshawk and peregrine falcon in terms of reducing the quality of foraging habitat for a 5-10 year period following reclamation. At this scale and considering future reclamation efforts, recovery of this area would occur eventually however it would not become forested land capable of providing potential goshawk breeding habitat (mature forest) for at least 75 – 100 years. The project footprint does not have and would never (within our lifetimes) develop cliffs, rock outcrops capable of providing nesting habitat for the Mexican spotted owl and peregrine falcon.

### Management Indicator Species Analysis

The Santa Fe National Forest Plan (USFS 1987) designated 8 species known as Management Indicator Species (MIS). The intent was to select species that would indicate possible effects of changing plant communities and associated seral habitats on each species. These species were selected for their association with plant communities or seral stages, which management activities are expected to affect.

Table 6 displays MIS species, briefly describes their habitat association/indicator and also discloses if the habitat quantity or quality is being altered under the alternatives. The 2012 MIS assessment contains more specific information regarding species trends (USFS 2012) and was utilized to build this brief summary and MIS analysis.

**Table 6.** MIS Impact Table. Rationale for omission from further analysis.

Vegetation Type/Species Occurring in the Project Area	Is the Forest wide quantity of habitat impacted?		Is the Indicated Habitat quality being altered?		Rationale for Omission
	YES	NO	YES	NO	
<b>Mature – Old Growth Forest</b>					
Mexican Spotted Owl		X		X	No old growth forest habitat would be impacted by any of the alternatives.
<b>Alpine Meadow Habitat</b>					

Vegetation Type/Species Occurring in the Project Area	Is the Forest wide quantity of habitat impacted?		Is the Indicated Habitat quality being altered?		Rationale for Omission
Rocky mountain Bighorn Sheep		X		X	This habitat component does not exist in the project area.
<b>Mid-elevation grasslands, meadows and forested areas &lt; 9,000 ft.</b>					
Rocky mountain Elk		X	X		N/A
<b>Mature Ponderosa Pine Forest</b>					
Merriam's Turkey		X		X	Mature ponderosa pine forest would not be impacted by the alternatives.
<b>Mid and low elevation grasslands, woodlands and ponderosa pine habitats</b>					
Mourning Dove		X	X		N/A
<b>Mature forest and woodland habitats</b>					
Hairy Woodpecker		X		X	Mature forest and woodland habitats would not be impacted by any of the alternatives.
<b>Pinyon- Juniper habitat</b>					
pinyon Jay		X		X	There is no pinyon-juniper habitat which would be impacted by any of the alternatives.
<b>Riparian, stream and water quality</b>					
Rio Grande cutthroat trout		X		X	There are no fish bearing streams which within or near the project area.

Table 7 shows MIS species, population trend, habitat trend, total acres of MIS habitat on the Forest by species, acres of each habitat type within the project area and the percent of the project area MIS habitat acres when compared to total Forest acres available. For information regarding why habitat trends or population trends are in a specific status, see the 2012 MIS analysis. All acre estimates are approximate.

**Table 7.** MIS population trend, habitat trend (2012 MIS assessment data) and total acres of MIS habitat on Forest, Project area and Determination.

Trends, (FW) and Total Forest/ Project Area Acres, and Determination Table						
Vegetation Type/Species	MIS Population Trend (FW)	Habitat Trend (HT)	Total Forest Acres (TFA)	Project Area Acres (PAA)**	% PAA of TFA*	Determination
<b>Mature – Old Growth Forest</b>			<b>630,191</b>	<b>0</b>	<b>0</b>	<b>NE</b>
Mexican Spotted Owl	S	D				NE
<b>Alpine Meadow Habitat</b>			<b>7,810</b>	<b>0</b>	<b>0</b>	<b>NE</b>
Rocky mountain Bighorn Sheep	S	S				NE
<b>Mid-elevation grasslands, meadows and forested areas &lt; 9,000 ft.</b>			<b>1,287,640</b>	<b>45</b>	<b>.003 (&lt;1%)</b>	<b>NE</b>
Rocky mountain Elk	I	S				NE
<b>Mature Ponderosa Pine Forest</b>			<b>603,235</b>	<b>0</b>	<b>0</b>	<b>NE</b>
Merriam's Turkey	S	S				NE

Mid and low elevation grasslands, woodlands and ponderosa pine habitats			581,419	45	.009 (<1%)	NE
Mourning Dove	S	I				NE
Mature forest and woodland habitats			80,174	0	0	NE
Hairy Woodpecker	S	I				NE
Pinyon- Juniper habitat			232,204	0	0	NE
pinyon Jay	S	D				NE
Riparian, stream and water quality			128.7 miles	0	0	NE
Rio Grande cutthroat trout	S	D				NE
KEYS						
<b>MIS population trend column key:</b> FW- Forest wide I - Increasing trend for MIS population Forest wide U - Unknown trend for MIS population Forest wide S – Stable trend for MIS population Forest wide D – Decreasing trend for MIS population Forest wide - All Forest Wide data here is based on the 2012 MIS species assessment.			<b>Habitat trend column key:</b> S - Static trend for KHC Forest wide U - Upward trend for KHC Forest wide D – Downward trend for KHC Forest wide S – Stable trend for KHC Forest wide NC- No change for KHC Forest wide			
<b>Determination column key:</b> NE- No effect to the FW trends – i.e., any impacts would not alter the existing trends, regardless of the impacts in relation to the trends. WC- Would Contribute to the current FW trends – i.e., any impacts are in the direction of the current trend. WA- Would Alter the current FW trends.					<b>Acreeage Calculation:</b> *- Project Area Acres is calculated by (PAA / TFA = % of TFA **Project area acres only includes acres of merged polygons of the PA (Alt 2).	
References: MIS species and 2012 MIS assessment updated for the Santa Fe National Forest USDA Forest Service (USFS). 1987. Santa Fe National Forest Plan, as amended. Albuquerque, NM: USDA Forest Service. USDA Forest Service (USFS). 2012. Santa Fe National Forest Management Indicator Species Assessment. Santa Fe National Forest Supervisor’s Office, Santa Fe, NM						

## Direct and Indirect Effects

The proposed action and all alternatives have the potential to impact two of the 8 MIS, Rocky mountain elk and mourning dove. Direct impacts from the implementation of the proposed action and alternatives would be limited due to the design of the project. Specifically, migratory birds and resident birds like mourning doves that could potentially be displaced but mortality to individuals from felling trees would not be possible. This is because tree felling would occur from August 15 – March 1 in any given year which is outside of the breeding season for most avian species. Rocky mountain elk foraging behavior could be indirectly impacted due to pumice mining activities. As vegetation is cleared for mining purposes, foraging habitat would be reduced in quality and removed entirely until rehabilitation occurs many years later. At the landscape scale, 45 acres of vegetation removal (which would not occur all at one time) would not negatively impact Rocky mountain elk habitat or mourning dove habitat because there is habitat available within the vicinity and throughout the District. Reclamation efforts would provide for recovery of the area over a 5- 10 year period and the existing adjacent south pit mine (now closed) shows recent sign of elk using the reclaimed habitat (Figure 4).



**Figure 4. Elk sign shown within existing closed and reclaimed pumice mine. 4/18/2019.**

### **Cumulative Effects**

Cumulative effects analyzed at the project area scale includes the footprint and haul route south to Paliza campground area near the town of Ponderosa on National Forest System lands.

Cumulative effects include past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes actions. Timber harvest, road construction, maintenance, powerline installation and maintenance, adjacent private land use, recreation, grazing, fire management and future timber harvest (adjacent and within project area) have added to cumulative effects to management indicator species. At this small scale (45 acres) the project footprint is unlikely to meaningfully contribute to cumulative effects to rocky mountain elk and mourning dove habitat.

### **Migratory Bird Analysis**

Direction for management and protection of migratory birds and their habitats within the continental United States exists in several forms.

- The Migratory Bird Treaty Act (MBTA) enacted in 1918 established Federal prohibition, unless permitted by regulations, to pursue, hunt, take, capture, kill any migratory bird, any part, nest, or egg of any such bird.

- Executive Order (EO) 13186 signed January 10, 2001 directed Federal agencies to avoid or minimize adverse impacts (to the extent practical) on migratory bird resources when conducting agency actions (among many items within the “Federal Agency Responsibilities” section of the EO).
- Pursuant to the EO, agencies were to develop Memorandum of Understanding (MOU) to strengthen and promote migratory bird conservation and collaboration with the U.S. Fish and Wildlife Service. The original 2008 MOU was extended and signed in 2016.
- Bald and Golden Eagle Protection Act (1940 as amended) protects eagles from actions of anyone (or entity) which would “take” eagles to the point of causing nest failure or reduce productivity (unless you or your entity have obtained a permit issued by the Secretary of the Interior).

There have not been specific USFS policies provided to direct migratory bird analyses into the NEPA process. However, the Southwestern Regional Office (R3 USFS) direction on migratory bird analysis is as follows.

- 1) Analyze effects to Species of Concern which are developed by the local (State) Partners In Flight Office with an emphasis on “high priority species”.
- 2) Analyze effects of project action on Important Bird Areas (IBA’s) and
- 3) Analyze effects of project actions to important overwintering areas on USFS lands.

Table 8 shows Species of Concern (SOC) which have been identified by the State of New Mexico Partners in Flight and were considered for this analysis. These species are shown by habitat type and nest substrate, nest type, usual nest height and nesting period. This table was utilized to guide the effects analysis. The Natural Resource Information System (NRIS), eBird and field reconnaissance was utilized to evaluate occurrence of species for this analysis.

**Table 8.** Species Account Table for Migratory Bird Analysis (Species of Concern).

<b>SPECIES ACCOUNTS</b>				
Santa Fe National Forest migratory bird species of concern. We assume the following migratory bird species of concern may occur in the project area because their habitats also are within the activity area or within the Forest. The Forest is aware that <i>some of the species on this list are not known to occur on the Forest</i> but are shown here for the reader to understand that these species and habitat are considered during project analysis.				
Species	Nest Substrate <sup>b</sup>	Nest type <sup>b</sup>	Usual nest height range <sup>b</sup> (feet)	Nesting Period <sup>c</sup>
<b>Mixed Conifer Forest:</b> Douglas fir, white fir, ponderosa pine, often some aspen and Gambel’s oak.				
Owl, flammulated <sup>a</sup>	snag	cavity	no information	May to Jul
	conifer, cliff	cavity, platform, scrape	80	May to Sep
Owl, Mexican spotted <sup>a</sup>				
Warbler, red-faced <sup>a</sup>	ground	cup	0	May to Jul
<b>Ponderosa pine forest:</b> primarily pure ponderosa pine forest				
Owl, flammulated <sup>a</sup>	snag	cavity	no information	May to Jul

<b>SPECIES ACCOUNTS</b>				
Santa Fe National Forest migratory bird species of concern. We assume the following migratory bird species of concern may occur in the project area because their habitats also are within the activity area or within the Forest. The Forest is aware that <i>some of the species on this list are not known to occur on the Forest</i> but are shown here for the reader to understand that these species and habitat are considered during project analysis.				
Species	Nest Substrate <sup>b</sup>	Nest type <sup>b</sup>	Usual nest height range <sup>b</sup> (feet)	Nesting Period <sup>c</sup>
Owl, Mexican spotted <sup>a</sup>	conifer, cliff	cavity, platform, scrape	80	May to Sep
Warbler, Grace's <sup>a</sup>	conifer	cup	20 to 60	May to Aug
Warbler, red-faced <sup>a</sup>	ground	cup	0	May to Jul
Warbler, Virginia's <sup>a</sup>	ground	cup	0	Apr to Aug
Woodpecker, Lewis's <sup>a</sup>	deciduous tree, snag	cavity	5 to 100	May to Aug
<b>Middle- Elevation Riparian:</b> Deciduous woodlands <7,500 feet elevation. Cottonwood – willow associations.				
Flycatcher, southwestern willow	shrub, deciduous tree	cup	2 to 10	Jun to Aug
Vireo, Bell's <sup>a</sup>	shrub	cup	1 to 5	Mar to Sep
Warbler, Lucy's	snag	cavity	3 to 11	Apr to Jul
Woodpecker, Lewis's <sup>a</sup>	deciduous tree, snag	cavity	5 to 100	May to Aug
<b>pinon – Juniper woodland</b>				
Jay, pinon	conifer	cup	3 to 26	Apr to Aug
Titmouse, juniper	deciduous tree, snag	cavity	3 to 10	Apr to Jul
Thrasher, Bendire's	shrub	cup	2 to 4	Mar to Aug
Vireo, gray <sup>a</sup>	shrub	cup	2 to 6	Apr to Aug
<b>Montane Shrub:</b> Chaparral and shrub habitat ranging from 5,500 to 8,000 feet elevation.				
Sparrow, black-chinned	shrub	cup	1.5 to 3	Apr to Aug
Vireo, gray <sup>a</sup>	shrub	cup	2 to 6	Apr to Aug
Warbler, Virginia's <sup>a</sup>	ground	cup	0	Apr to Aug
<sup>a</sup> Species occur in other habitat categories too				
<sup>b</sup> Source: Ehrlich and others 1988				
<sup>c</sup> Source: Corman and Wise-Gervais 1995				

## Direct and Indirect Effects

NM Avian Conservation Partners considers eight risk factors in identifying conservation priority species: Global Abundance, NM Breeding Abundance, Global Breeding Distribution, NM Breeding Distribution, Threats to Breeding in NM, Importance of NM to Breeding, Global Winter Distribution, and Threats on Wintering Grounds. A list of species at the highest risk are classified as “highest priority” for conservation action. This evaluation addresses general effects to migratory birds, and effects to Highest Priority species for the main habitat types found in the project area (New Mexico Partners in Flight, 2007).

Direct effects to SOC's across all alternatives are mitigated and avoided through project design features. For example, no vegetation clearing activities would occur from March 1 – August 15 in

any year which is outside the breeding season for most avian species. Should vegetation removal be required during the breeding season, pre-construction breeding bird surveys would be conducted by qualified personnel to ensure that no breeding birds would be affected. Any positive pre-construction survey results or observation of affected species during construction would be discussed with the District Biologist to coordinate nesting area avoidance.

Indirect effects to SOC's would only occur for those which occupy the "ponderosa pine" habitat type depicted in table 8. SOC's which could be indirectly impacted include flammulated owl, Grace's warbler, Virginia's warbler and Lewis's woodpecker all of which are known to occur near the project area. Indirect effects to these SOC's would occur due to habitat removal outside of the breeding season and would remove future opportunities for breeding. Noise generated from vegetation clearing and pumice mining activities could also indirectly impact these species (project area avoidance) if they attempt to nest or reside within the vicinity. A remote possibility exists that SOC's could be killed by hauling trucks but the speed limit requirement would mitigate that possibility provided it is followed.

Red faced warbler is not known to occur on the Forest and there would be no impact to that species indirectly. The Mexican spotted owl will be addressed within a Biological Assessment.

### Important Bird Areas

The IBAs on or adjacent to the Santa Fe National Forest are shown in table Table 99.

**Table 9.** Important Bird Areas and Mileage to Project Area.

Important Bird Area Name	Ownership	Distance to Project Area
Chama River Gorge/Golondrino Mesa	USFS (Santa Fe); Bureau of Land Management	>38 miles
Caja del Rio	USFS (Santa Fe); Bureau of Land Management	>17 miles
Valles Caldera National Preserve	National Park Service	>3 miles
Bandelier National Monument	National Park Service	> 9 miles
Randall Davey Center	The Nature Conservancy; NM Audubon	>25 miles
Santa Fe Canyon Preserve	The Nature Conservancy	>25 miles

There is no association or important link between the bird communities in this project area and these IBAs.

### Overwintering Areas

Several areas are recognized on the Santa Fe National Forest as being overwintering areas. Generally, they are lower elevation sites with perennial water sources that provide for adequate cover and mast production during winter months. Rio Chama, Rio Grande corridor and Pecos canyon are overwintering areas which are located some distance from the project area. The project area is not located near any known overwintering areas for birds.

### Determination of Effects

It is possible that the alternatives could result in indirect effects to migratory birds primarily through removal of potential breeding habitat outside of the breeding season and noise generation

due to pumice mining and reclamation activities. A remote possibility exists that SOC's could be killed by hauling trucks but the speed limit requirement would mitigate that possibility provided it is followed. No direct effects are anticipated.

### **Cumulative Effects**

Cumulative effects analyzed at the project area scale. This includes the footprint and haul route south to Paliza campground area near the town of Ponderosa on National Forest System lands. Cumulative effects include past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes actions. Timber harvest, road construction, maintenance, powerline installation and maintenance, adjacent private land use, recreation, grazing, fire management and future timber harvest (adjacent and within project area) have added to cumulative effects to migratory birds. The proposed action and alternatives would slightly add to these past and future activities across 45 acres and possibly the haul route. It is unclear what total effect the addition of this project would have to these cumulative effects. At this scale and considering future reclamation efforts, recovery of this area would occur however it would not become forested land capable of providing some of the SOC's with breeding habitat (mature forest) for at least 50 – 100 years.

### **Air Quality**

This section discusses the existing air quality at the proposed project area and then discusses the environmental consequences for this resource from each of the proposed alternatives. Air quality was raised as a concern during scoping due to the dust generated during mining and by the truck traffic on the Forest roads.

### **Affected Environment**

Under the authority of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established nationwide air quality standards to protect public health and welfare, with an adequate margin of safety. These federal standards, the National Ambient Air Quality Standards (NAAQS), regulate seven criteria pollutants, including lead (Pb), nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), particulate matter 10 microns or less in size (PM<sub>10</sub>), particulate matter 2.5 microns or less in size (PM<sub>2.5</sub>), and ozone (O<sub>3</sub>). Air quality in the project area falls under the jurisdiction of the State of New Mexico Environment Department, Air Quality Bureau (Air Quality Bureau), which was granted regulatory authority (monitoring and enforcement) by the EPA following the EPA's approval of New Mexico's State Implementation Plan.

The Air Quality Bureau classifies air quality in Sandoval County, New Mexico, as in attainment for all criteria pollutants regulated under the Clean Air Act (U.S. EPA 2007). This means that the air quality in the proposed project area does not exceed acceptable levels of the listed criteria pollutants per EPA standards. In attainment areas, Prevention of Significant Deterioration (PSD) regulations apply; in nonattainment areas, New Source Review regulations apply. The PSD regulations provide special protection from air quality impacts for certain areas, primarily national parks and wilderness areas, designated as Class I areas. Mandatory PSD Class I areas in New Mexico that were established under the Clean Air Act Amendment of 1977 are listed under 40 CFR §81.421.

Bandelier National Monument, a listed PSD Class I area (40 CFR §81.421), is administered by the USDI National Park Service. Bandelier National Monument is approximately 10 miles northeast of the project area.

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Meteorological conditions have a significant impact on the pollutant concentrations because they control the dispersion or mixing of pollutants in the atmosphere through the influences of wind speed, wind direction, atmospheric stability, and other meteorological variables. For example, summer thunderstorms can produce dust storms that carry large quantities of particulate matter high into the atmosphere.

The affected environment for inert pollutants (all pollutants other than ozone and its precursors) is generally limited to a few miles downwind of a source. For PM10 emissions from construction and operational activities, the affected environment is limited to the area immediately surrounding the construction sites. For large sources of ozone precursors, the affected environment for ozone can extend much farther downwind than for inert pollutants. In the presence of solar radiation, the maximum effect of volatile organic compounds (VOCs) and nitrogen oxide (NOx) emissions on ozone levels usually occurs several hours after these pollutants are emitted and many miles from the source. For the proposed project, the affected environment for air quality includes the Village of Ponderosa, the Jemez Pueblo, the community of Sierra de los Pinos, and the immediately surrounding areas of the Jemez Mountains.

### **Proposed Action**

This alternative could result in a number of possible sources of pollutants associated with the construction and operation of the proposed mine expansion that could impact air quality. Emissions from engines that may impact local air quality include engine exhaust from mining equipment, private vehicles used for worker transport, trucks hauling extracted pumice to and returning from the processing facility, and heavy equipment used for road maintenance activities.

Fugitive dust would also be a concern during the mine operation. Ground disturbance resulting from this alternative would release fugitive dust into the air, especially when vegetation is removed and bare soil is exposed to the wind. In addition, dust produced from trucks hauling pumice and private worker vehicles traveling on dirt roads would result in the creation of fugitive dust particles. Dust and PM10 emissions would also result from the mining and screening of pumice in dry conditions.

No PSD Class I areas are in the immediate vicinity of the proposed project area. Several such areas do exist in the region, but they are at some distance from the proposed site (10 miles or greater). Therefore, given the long distances involved and the low emission increases expected from the proposed action, there would be no direct or indirect impacts to PSD Class I air quality in the short or the long terms under the proposed action.

All emission/pollutant sources would be regulated by the Air Quality Bureau. If the proposed expansion area is authorized, the operator would be required to obtain all appropriate and necessary air quality permits and would be held accountable for maintaining emission levels that are within the regulated limits.

This alternative would add cumulatively to air quality impacts within the region. Recreational forest use, combined with concurrent construction, operational, and prescribed burning activities are projected to occur during spring, summer, and fall, with the summer season being the expected peak of all cumulative activities, resulting in the greatest air quality impacts. Verifying that projects have all applicable and appropriate air quality permits in place would ensure that the EPA-regulated air quality constituents remain at acceptable levels within the region.

### **Reduced Haul Rate Alternative**

This alternative would result in the same impacts as under the proposed action; however, because of the reduction of two round-trip truckloads hauled per day, vehicular emissions and fugitive dust produced during pumice transport would be reduced. It is also likely there would be less disturbance at the mine site, which would release less fugitive dust.

Cumulative effects under this alternative would be similar to those effects discussed under the proposed action. The primary difference would be that pumice hauling under this alternative would be limited to four round trips per day rather than six, resulting in less vehicular emissions and fugitive dust produced during pumice transport.

### **Reduced Haul Rate and Reduce Area Alternative**

This alternative would result in the same impacts as under the reduced haul alternative - vehicular emissions and fugitive dust produced during pumice transport. However, with the reduction in area that can be mined to 4 acres, fugitive dust during the mine operation would be considerably less since the amount of exposed soil would be reduced. Less ground disturbance at any one time from this alternative would result in the release of less fugitive dust into the air. Dust and PM<sub>10</sub> emissions resulting from the mining, and screening of pumice in dry conditions would also be reduced since less pumice would be mined at any one time.

Cumulative effects under this alternative would be similar to those effects discussed under the proposed action. The primary difference would be that pumice hauling under this alternative would be limited to four round trips per day rather than six, resulting in less vehicular emissions and fugitive dust produced during pumice transport; and instead of expecting the operation to continue over a ten year period, it would take about 2 years to mine the four-acre area.

## **Water Resources**

This section discusses the existing water resources (surface waters and groundwater) at the proposed project area and discusses the environmental consequences for these resources from each of the proposed alternatives.

### **Affected Environment**

#### **Surface Water**

The proposed project area is within the San Juan Canyon tributary to Vallecito Creek. Vallecito Creek lies within the Middle Jemez River Watershed (HUC 1302020204). This watershed is part of the larger Jemez Watershed (HUC 13020202).

The proposed project area is approximately 0.25 mile east of San Juan Canyon in an un-named canyon. The stream in this canyon is not listed on the 2018 State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Report; thus this stream has not been listed as impaired for any water quality parameters.

According to the Santa Fe National Forest's GIS database, San Juan Canyon does not support riparian vegetation near the project area. It is likely that dispersed pockets of riparian plants do occur within San Juan Canyon in this area; however, they are probably isolated and are very limited by their surrounding soils.

The haul route on FR 270 is approximately 1 mile south of its junction with FR 10 and is within one quarter mile of San Juan Canyon drainage. FR 10 is within one quarter mile of Vallecito Creek from the junction of FR 266 to the northeast end of the paved State Road 290. Vallecito Creek has been identified by the New Mexico Environment Dept. as a Category 5 water due to sedimentation/siltation and turbidity exceeding standards (2018-2020 NMED listing).

### **Groundwater**

The proposed South Pit Pumice Mine expansion would be located above a deep aquifer identified as South Mountain Rhyolite. This aquifer sits in rhyolite material several (200 to 300) feet below the surficial pumice materials (Self et al. 1988). The surficial pumice deposits, which would be mined, are underlain by a non-permeable clay paleosol which prevents water from traveling through the pumice into the underlying rhyolite.

Tritium dating of the water in this aquifer in nearby residential wells indicates that the water has been underground for at least 30 years [since mid-1960s] and is thought to come from the higher peaks surrounding the Valle Grande on the Valles Caldera National Preserve (Colpitts 1994).

Water flow in the deep aquifer is probably controlled by fractures in the rhyolite. Field observations indicate that these fractures do not penetrate overlying materials such as pumice. In other words, though the pumice material is highly heterogeneous and may seem porous, there is apparently a very small to insignificant water flux through the pumice material to the underground aquifer, which runs under the proposed project area (Colpitts 1994).

The National Hydrologic Dataset shows three springs in the unnamed wash southeast of the proposed mine site. These springs range in distance from about 650 feet to 1900 feet from the mine site, are separated from the proposed mine site by other dry washes, and are at about the same elevation as the proposed mine site, so it is unlikely they are hydrologically connected to the proposed mine site.

## **Proposed Action**

### **Surface Water**

The proposed action would not have direct or indirect effects the surface waters located just south of the mine site, as well as those 0.25 mile west of the proposed project area because of design criteria requiring internal drainage. It is possible that a small amount of sediment might be moved off the project site as a result of proposed mining activities; however, it is highly unlikely that this sediment would reach San Juan Canyon.

### *Cumulative Impacts*

As described in the Traffic section, the proposed action would have a 3% increase in traffic (over 2015 rates) on the section of FR 10 along Vallecito Creek, so a small increase in sedimentation into the creek could occur.

#### **Groundwater**

The proposed action is unlikely to have adverse effects on groundwater resources. Mining activities would occur on 45 acres or less, with pumice extraction occurring from approximately 10 to 30 feet below the ground surface.

Given this depth of pumice extraction and characteristics of the aquifer, it is highly unlikely that the proposed pumice mine would have any adverse effect on the recharge of the deep aquifer. The aquifer is overlain by approximately 200 feet of mostly coarse pumice and impermeable clay paleosol materials that would prevent flow into the aquifer from the proposed mine site.

In addition to the on-site materials that would prevent water flux with the aquifer, project design criteria would require that no fuel or oil materials be stored on site and that spill kits are required on site to contain spilled materials such as petroleum, should a spill occur.

### **Reduced Haul Rate Alternative**

#### **Surface Water**

The reduced haul rate alternative would have the same effects at the mine site as described for the proposed action.

As described in the Traffic section, there would be a 2% increase in traffic (over 2015 rates) on the part of FR 10 along Vallecito Creek, so a small increase in sedimentation could occur.

#### **Groundwater**

The reduced haul rate alternative would have the same impacts as those described for the proposed action.

### **Reduced Haul Rate and Reduced Area Alternative**

#### **Surface Water**

The reduced haul rate alternative would have the same effects at the mine site as described for the proposed action for a shorter period of time.

As described in the Traffic section, there would be a 2% increase in traffic (over 2015 rates) on the part of FR 10 along Vallecito Creek, so a small increase in sedimentation could occur.

#### **Groundwater**

The reduced haul rate and reduced area alternative would have the same impacts as those described for the proposed action.

## Heritage Resources

### Affected Environment

A 100% survey of the proposed expansion area was completed during 2005. A determination that no historic properties would be affected by the proposed project will be submitted to the State Historic Preservation Officer for concurrence.

The proposed project is located in an area considered an “Ancestral Hunting Area” by the Pueblo of Jemez. There are four cultural resource sites within one-half mile of the project site.

### The Proposed Action, Alternative 1 - Reduced Haul Rate, and Alternative 2 - Reduced Haul Rate and Reduced Area

None of the alternatives a direct effect on heritage resources given that surveys of the proposed project area and surrounding areas resulted in a finding that there are no sites in the project area. Removal of vegetation and the disturbance associated with mining activities may affect the habitat in the project area or the presence of game species near the project site. Sediment could affect downstream heritage resource sites if barriers and other sediment controls are ineffective.

There would be no cumulative impacts to heritage resource areas, since there are no sites within the project area. Game species would be expected to disperse from the area during mining operations.

## Noise

### Affected Environment

The proposed mine site is located in a rather remote area; however, commercial logging and firewood cutting occur in the area. There is private land containing seasonal residences about one quarter mile to the south of the proposed mine location.

Noise readings taken at El Cajete mine determined that pumice mining activities contributed insignificant noise levels to the surrounding environment. Noise surveys from this mine were collected in July and August of 2006, and additional survey in 2007 using a Sper Scientific Sound Meter 840005 (Larry Gore, U.S. Forest Service, unpublished data). Although one reading in 2007 reached a decibel (dB) reading of 60, the remaining readings within the mine area or in the immediate vicinity of the mine ranged from a high of 55 to less than 40. The normal background readings (no mine or vehicular noise) varied from 40 to 50 dB. Therefore, the average of the readings from the mine location during operation for the three surveys was well within the normal range.

The access route, including Forest Roads 270 and 10, are heavily used by Forest Service vehicles, commercial logging vehicles, firewood cutters, range permittees, recreational vehicles, and private land owners. The Paliza Campground and Paliza Group Area are adjacent to FR 10.

The pumice mining related traffic noise would be an incremental change to this existing traffic noise.

### **The Proposed Action, Alternative 1 - Reduced Haul Rate, and Alternative 2 - Reduced Haul Rate and Reduced Area**

None of the alternatives would have a direct impact on noise levels outside of the mine site.

The noise of the mine related traffic would be an incremental increase to the existing traffic noise, particularly noticeable at the dispersed campsites along FR 10 and the Paliza developed campground and Paliza Group Area.

## **Agencies and Persons Consulted**

An Environmental Assessment was drafted and reviewed by the public in 2007. The ID team and everyone consulted during that process are listed in that EA, which is part of the project record.

During the public review of the initial EA in 2007, we received 39 responses, containing 170 individual comments. The relevant comments have been addressed within this revised EA. All of the comments received during the 2007 review are available as part of the project record.

The following were consulted for the revised (2019) EA.

ID Team Member	Position	Contribution
Brian Riley	Jemez District Ranger	Responsible Official
Larry Gore	Santa Fe NF Geologist	Proposed Action and Alternatives, Editor
Sandra Imler-Jacquez	Santa Fe NF Forest Environmental Coordinator	NEPA review
Leah Hurley	Jemez Ranger District Recreation Staff Officer	Recreation
Andre Silva	Jemez Ranger District Wildlife Biologist	Biology
Peter Taylor	Jemez Ranger District Staff Archaeologist	Heritage Resources
Josh Hall	Ecosystem Staff Officer	Air Quality
Heidi Klingel	Santa Fe NF Hydrology and Soils	Water Resources

## FEDERAL, STATE AND LOCAL AGENCIES

U.S.D.I. Bureau of Land Management (2019)  
U.S. Fish and Wildlife Service (2007, 2019)  
New Mexico Department of Game and Fish (2007, 2019)  
New Mexico Environment Department (2007)  
New Mexico Environment Dept., SWQB (2019)  
New Mexico Department of Transportation (2007)  
New Mexico Mining and Minerals Division (2019)  
Sandoval County Commission (2019)  
Village of Ponderosa (2007)  
Sierra los Pinos Homeowner's Association (2007, 2019)  
Village of Jemez Springs (2019)

## TRIBES

Pueblo of Jemez (2007, 2019)  
Pueblo of Santo Domingo (2007, 2019)  
Pueblo of Cochiti (2019)  
Pueblo of Zia (2019)  
Navajo Nation (2019)  
Jicarilla Apache Nation (2019)

## OTHERS

Forest Guardians (2007)  
Sangre de Cristo Audubon Society (2007, 2019)  
Terry Johnson, raptor specialist (2007, 2019)  
Defenders of Wildlife (2019)  
Wild Watershed (2019)  
San Diego Cattlemen's Assoc. (2019)  
San Diego Grazing Assoc. (2019)  
Wildearth Guardians (2019)  
New Mexico Wilderness Alliance (2019)  
Sierra Club (2019)  
Pajarito Group – Sierra Club (2019)  
Center for Biological Diversity (2019)

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